

Fast-Erecting Portable Structure

CROSS-REFERENCE TO RELATED APPLICATIONS

[001] The present application claims priority to co-pending US provisional
5 application entitled "Fast-Erecting Portable Structure," having serial no. 60/534,308, filed
by inventors R. Justin Price and Walter L. Price on January 5, 2004, which is entirely
incorporated herein by reference.

BACKGROUND OF THE INVENTION

10 Field of the Invention

[002] The present invention relates generally to portable fast-erecting structures,
and particularly to portable fast-erecting tents.

Discussion of the Related Art

[003] Prior apparatus designed to achieve a portable structure that can be
15 quickly erected have been disclosed in the following United States or foreign patents:
U.S. Pat. No. 3,960,161 (Norman), U.S. Pat. No. 3,990,463 (Norman), U.S. Pat. No.
4,858,634 (McLeese), U.S. Pat. No. 5,163,461 (Ivanovich et al.), U.S. Pat. No. 5,407,291
(Hazinski et al.), U.S. Pat. No. 5,676,168 (Price), U.S. Pat. No. 5,337,772 (Habachi), U.S.
Pat. No. 5,601,105 (Blen et al.), U.S. Pat. No. 5,645,096 (Hazinski et al.), U.S. Pat. No.
20 6,199,229 (Wong), U.S. Pat. No. 6,514,149 (Yoon), U.S. Pat. No. 6,517,444 (Yoon), U.S.
Pat. No. 6,371,143 (Swetish), U.S. Pat. No. 6,325,086 (Shinner et al.), U.S. Pat. No.

5,370,145 (Wu), U.S. Pat. No. 4,520,835 (Moeller), U.S. Pat. No. 4,311,159 (Wunderlich), U.S. Pat. No. 3,925,943 (Petrie), U.S. Pat. No. 3,190,300 (Wear'n), U.S. Pat. No. 2,547,770 (Pelton), U.S. Pat. No. 2,266,853 (Dabney), U.S. Pat. No. 3,970,096 (Nicolai), U.S. Pat. No. 5,638,850 (Hazinski et al.), U.S. Pat. No. 3,800,814 (Hibbert),
5 U.S. Pat. No. 3,621,857 (May, et al.), U.S. Pat. No. 4,709,718 (Nichols), U.S. Pat. No. 4,858,635 (Eppenbach), U.S. Pat. No. 6,470,901 B1 (Scherer), U.S. Pat. No. 6,397,869 (Jennings), and EPO application 545,637 (Gartin et al.). None of these references, however, disclose the aspects of the current invention.

SUMMARY OF THE INVENTION

10 [004] The invention is summarized below only for purposes of introducing embodiments of the invention. The ultimate scope of the invention is to be limited only to the claims that follow the specification.

[005] In the preferred embodiment shown in FIG. 1, the fast-erecting portable structure principally comprises two flexible framing rods and a flexible skin. In the open
15 or "released" position, the flexible framing rods form two inverted u-shapes that are roughly perpendicular to each other. The flexible skin hangs from the flexible framing rods in substantially a dome shape. More specifically, the flexible skin is supported from the flexible framing rods by sleeves sewn into the flexible skin. The sleeves allow the flexible skin to slide along the length of the flexible framing rods. The flexible skin is
20 also fixed (or non-removably connected) to the ends of the flexible framing rods.

[006] The fast-erecting portable structure can be stored by coiling the flexible framing rods into a storage bag. It is preferred that the storage bag has an interior pocket.

The interior pocket is valuable for assistance in coiling the flexible framing rods into the storage bag. FIGS. 5A-5R illustrate the preferred method of coiling and stowing the fast-erecting portable structure: first, rotate the first framing rod relative to the second framing rod so that they are roughly parallel to each other; second, insert one end of the first framing rod and one end of the second framing rod into the interior pocket; third, coil the first framing rod and the second framing rod into the storage bag by working from the ends of the framing rods and tucking the framing rod into the storage bag at approximately one foot of flexible framing rod at a time until the entire length of framing rods are coiled inside the storage bag; fourth, stuff the flexible skin into the storage bag and fifth, close the storage bag.

[007] To set up the fast-erecting portable shelter once it has been coiled and stowed in the storage bag, one would simply grab the loose ends of the flexible framing rods, the ends not in the interior pocket, and begin pulling the ends out of the storage bag until the fast-erecting portable structure is completely out of the storage bag. One of the two flexible framing rods is then released (so that the user is holding only one of the two flexible framing rods). Once the user is holding only one of the two flexible framing rods, the fast-erecting portable structure will finish opening on its own. The fast-erecting portable structure can then be placed in a desired location. The four ends of the flexible framing rods rest on the surface of the desired location forming a base. The fast-erecting portable structure allows the structure to be immediately erected from the coiled position in the storage bag into the structure shown in FIG. 1A without any intermediate steps or the addition or removal of any parts. Optional embodiments include the addition of a

third (or more) framing rod, a rain-fly, a rain-fly with its own flexible framing rods, stabilizing guys and stakes as described more fully herein.

[008] It is an object of the present invention to provide a fast-erecting portable structure that requires no insertion or removal of support rods or poles to set up or take
5 down the tent under ordinary circumstances.

[009] Likewise, it is an object of the present invention to provide a fast-erecting portable structure that does not require the tent skin to be separated from the tent's support structure to set up or take down the tent under ordinary circumstances.

[010] It is an object of the present invention to provide a fast-erecting portable
10 structure that requires no framing loops

[011] It is an object of the present invention to provide a fast-erecting portable structure that does not require its framing system to undergo compound bending.

[012] It is an object of the present invention to provide a fast-erecting portable structure that does not require tubular sleeves to reduce torsional stress.

[013] It is an object of the present invention to provide a fast-erecting portable
15 structure that can be quickly and easily stowed in a small and conveniently portable bag.

[014] It is an object of the present invention to provide a fast-erecting portable structure that does not need to be folded into a "figure-eight" in order to stow it in a reasonably sized portable bag.

[015] It is an object of the present invention to provide a fast-erecting portable
20 structure that is a double-wall structure, the inside wall being breathable and the outside wall waterproof.

[016] It is an object of the present invention to provide a fast-erecting portable structure that can stand alone without guy reinforcement, but have a guy reinforcement option available.

[017] The description of the invention that follows, together with the
5 accompanying drawings, should not be construed as limiting the invention to the example shown and described, because those skilled in the art to which this invention pertains will be able to devise other forms thereof within the ambit of the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[018] FIGS. 1 and 1A illustrate the preferred embodiment of the four-panel fast-
10 erecting portable structure.

[019] FIGS. 1B and 1C illustrate the preferred embodiment of the six-panel fast-erecting portable structure.

[020] FIG. 2 is an enlarged view of a sleeve 50, the preferred flexible tie 42 connection and intersection 40.

15 [021] FIG. 3, 3A and 10 illustrate an end 22 of a flexible framing rod having a grommet holding piece 16 and flexible ring 18 holding the flap 12 the grommet 14 connected to the flexible skin 10.

[022] FIG. 4A illustrates a view of a storage bag.

[023] FIG. 4B illustrates a view looking out from inside of a storage bag
20 showing an interior pocket 62.

[024] FIG. 5A – 5R illustrate the preferred steps to coil and stow the tent in a storage bag.

[025] FIG. 5S illustrates an additional embodiment of the storage bag having a spacer 88.

[026] FIG. 6 illustrates an optional offset connection for the intersection 40.

[027] FIG. 6A illustrates an embodiment for an offset connector piece shown in

5 FIG. 6.

[028] FIGS. 6A and 6B illustrate the preferred embodiment of the fast-erecting portable structure.

[029] FIG. 7 illustrates a preferred embodiment of the six-panel fast-erecting portable structure with an optional fly.

10 [030] FIG. 7A illustrates the preferred embodiment of the six-panel fast-erecting portable structure with an optional fly and optional guy and stake assembly.

[031] FIG. 7 B illustrates and embodiment of a fabric loop 100 and a fly hook 102.

[032] FIG. 7 C illustrates and embodiment of a framing rod hook 36 and a
15 fabric loop 38.

[033] FIG. 8 illustrates a stake 106.

[034] FIG. 9 illustrates a preferred guy cinch.

[035] FIG. 10 illustrates an embodiment of a non-removable connection between the flexible framing rod and flap.

20 [036] FIG. 11 illustrates a preferred embodiment of a storage bag.

[037] FIG. 12 illustrates a side view of a preferred embodiment of a bag with the flap open.

[038] **FIG. 13** illustrates a view of the back side of a bag showing the flexible framing rods coiled inside the back with the ends in the interior pockets.

[039] **FIG. 14** illustrates a front view of an additional embodiment of the storage bag.

5 [040] **FIG. 14A** illustrates a back view of an additional embodiment of the storage bag.

[041] **FIG. 15** illustrates one embodiment of a cinch-able strap.

[042] **FIG. 15A** illustrates an additional embodiment of a non-removable connection between the flexible framing rod and a flap also having a removable
10 connector 116 for an optional fly.

[043] **FIG. 15B** illustrates an additional embodiment of a non-removable connection between two flexible framing rods and a flap.

[044] **FIG. 16** illustrates an optional additional step of inserting the flexible framing rods into the storage pocket and then rotating the ends and the bag along the
15 ground to assist with coiling the flexible framing rods into the storage bag.

[045] **FIGS. 17, 17A and 17B** illustrate an additional embodiment having four flexible framing rods with a hexagonal base configuration.

[046] **FIG. 17C** illustrates an additional embodiment having four flexible framing rods with a hexagonal base configuration and an optional fly.

20 [047] **FIGS. 18, 18A, 18B and 18C** illustrate an additional embodiment having four flexible framing rods with a rectangular base configuration. **FIG. 18B** is a top view of the embodiment.

[048] FIG. 18D illustrates an additional embodiment having four flexible framing rods with a rectangular base configuration and an optional fly.

[049] FIGS. 19 and 19A illustrate an additional embodiment of a two framing rod configuration tent with and an optional fly, wherein the optional fly has its own fly framing rods.

DESCRIPTION OF PREFERRED EMBODIMENT

[050] It is to be understood that the descriptions below are merely illustrative of the presently preferred embodiments of the invention and that no limitations are intended to the detail of construction or design herein shown other than as defined in the appended claims. In this specification, the term “non-removable” or “non-removably connected” refers to a connection that is not intended to be disconnected at any time by the user under ordinary circumstances during the useful life of the tent, including when the tent is set up, taken down, or stored away for future use. A “non-removable” connection could be removable in a non-ordinary circumstance, such as to remove and replace a broken part. In this specification, the term “slidably” or “slidably connected” refers to a connection where one part can move in relation to another part such as between a rod and a fabric sleeve when the rod is inserted into the fabric sleeve.

[051] Generally, the invention is incorporated in a fast-erecting tent having a flexible skin 10, a first flexible framing rod 20, and a second flexible framing rod 30. The first flexible framing rod 20 and the second flexible framing rod 30 each have two ends 22 and a middle 24. As used in this patent application, the term “middle” is not synonymous with center, but refers to any area on the rod that is between the two ends

22. In the released position shown in FIG. 1, the first flexible framing rod 20 and the second flexible framing rod 30 each form substantially into an inverted u-shape. In the two-rod embodiment, the first flexible framing rod 20 forms a first plane that is roughly perpendicular to a second plane formed by the second flexible framing rod 30. In this embodiment, the second flexible framing rod 30 crosses the first flexible framing rod 20 near the apex of the inverted u-shape. The two ends 22 of the first flexible framing rod 20 and the two ends 22 of the second flexible framing rod 30 act as a base of the fast-erecting portable structure.

[052] It is preferred that the flexible skin 10 be made, at least in part, from cotton. Other fabrics, such as polyester and nylon, will also work. Desired items such as doors, windows, screens and vents can be provided in conventional manner. In the preferred embodiment, the flexible skin 10 is created in a dome shape. It is preferred to create a dome shape by sewing together four separate panels, but many methods are known to create a flexible skin 10 in a dome shape. In the preferred embodiment, the first flexible framing rod 20 and the second flexible framing rod 30 form substantially into an inverted u-shape when the fast-erecting portable structure is released or picked up into the air by lifting up one of the flexible framing rods (20 & 30).

[053] It is preferred to slidably connect the flexible skin 10 to the middle 24 of the first and second flexible framing rods (20 & 30). This can be accomplished through the use of a sleeve 50. It is preferred to use sleeves 50 made a material substantially similar to the flexible skin 10. It is also preferred to sew the sleeve 50 into the flexible skin 10. Having a sleeve 50 allows the flexible skin 10 to move or slide relative to

flexible framing rods (20 & 30). Many other materials will also work as a sleeve, including a plurality of cloth loops. One or more sleeve openings 52 can be placed at desirable locations. For example, as shown in FIG. 2, it is preferred to place a sleeve opening 52 at the intersection 40 between the first and second flexible framing rods (20 & 30).

5 [054] In the preferred embodiment shown in FIG. 1, the sleeves 50 are connected to the flexible skin 10 predominantly along the middle 24 of the first and second flexible framing rods (20 & 30). In an alternate embodiment, the sleeves 50 are not connected to the skin predominantly along the middle 24 of the first and second flexible framing rods (20 & 30), but the sleeves 50 are intermittently spaced along the length of the first and second flexible framing rods (20 & 30).

10 [055] It is preferred to non-removably connect the flexible skin 10 to the ends 22 of the flexible framing rods (20 & 30). As shown in FIG. 10, it is preferred to sew a flap 12 having a grommet 14 onto the flexible skin 10 near the ends 22 of the flexible framing rods (20 & 30). The flap 12 can be made from most any fabric typically used in the art. There are many ways to non-removably connect the grommet 14 to the end 22. It is preferred to fabricate a cap 16 that can be glued or otherwise fastened onto the ends 22 of the flexible framing rods (20 & 30). It is preferred to fabricate the cap 16 from aluminum, but another suitable material can be used. The cap should have a flared section 17 so the grommet 14 can slide onto the cap 16 but only up to the flared section 17. The cap 16 can then be inserted through the grommet 14. After the cap 16 has been inserted through the grommet 14, a flexible ring 18 can then be inserted on the cap 16 to

prevent the grommet from sliding off the cap 16 as shown in FIG. 10. The flexible ring 18 is prevented from sliding off the cap 16 by a second flared section 19. It is preferred to manufacture the flexible ring 18 from a rubber-type material so that it can slide over the second flared 19 section after the cap 16 is inserted through the grommet 14 but cannot slide back under ordinary circumstances. The flared section 17 on one side of the grommet 14 and the flexible ring 18 on the other side keeps the grommet 14 non-removably connected to the end 22.

[056] It is preferred to use fiberglass pultrusion for the flexible framing rods 20 and 30. Other resilient material, such as spring wire, steel, plastic rod, fiberglass or structural polymer material will also work.

[057] The flexible framing rods (20 & 30) do not need to be connected to each other. Similarly, the flexible framing rods (20 & 30) need not be prevented from moving independently from each other. It is preferred that the first and second flexible framing rods (20 & 30) move independently of each other.

[058] It is preferred to use a flexible tie 42 to help center the flexible skin 10 below the intersection 40. It is preferred to create the flexible tie 42 from nylon or the same material used to make the flexible skin 10 however any suitable material will work. It is preferred to sew two flexible ties 42 to the center of the flexible skin 10 and tie the two flexible ties 42 together (using a bow tie or similar knot) over the intersection 40 of the flexible framing rods (20 & 30) as shown in FIG. 2.

[059] The fast-erecting portable structure can optionally include a third flexible framing rod 34 as shown in FIGS. 1C and 1D. Like the first and second flexible framing

rods (20 & 30), the third flexible framing rod 34 is formed substantially into an inverted u-shape having two ends and a middle, and wherein the third flexible framing rod 34 crosses the first flexible framing rod 20 and the second flexible framing rod 30 near the apex of the inverted u-shape. Like the first and second flexible framing rods (20 & 30), the flexible skin 10 is non-removably connected to the two ends 22 of third flexible framing rod 34. Unlike the first and second flexible framing rods (20 & 30), the third flexible framing rod 34 is removably connected to the middle of the flexible skin 10. Removably connecting the flexible skin 10 to the middle of the third framing rod permits the first, second, and third framing rods to be rotated relative to each other for easier storage as discussed below. More flexible framing rods can be added in the same manner as the third flexible framing rod 34 described herein.

[060] It is preferred to removably connect the flexible skin 10 to the middle of the third flexible framing rod 34 by a plurality of framing rod hooks 36. The framing rod hooks 36 can be removably connected to the flexible skin 10 by the use of fabric loop 38. The fabric loop 38 can be sewn into the flexible skin 10. In operation, the fast-erecting tent shown in FIG. 1C will spring roughly into shape when released in a substantially upright position, largely due to the first and second flexible framing rods (20 & 30) trying to straighten out and the flexible skin 10 holding them in an inverted u-shape. Once released in a substantially upright position, a user can then manually connect the framing rod hooks 36 to the third framing rod 34 to create the fast-erecting tent shown in FIGS. 1C and 1D. To dismantle the tent, a user would simply manually disconnect the framing rod hooks 36 from the third flexible framing rod 34, rotate the three flexible framing rods

(20, 30, 34) until they become substantially aligned with each other, and store the fast-erecting tent in a storage bag as described more fully below.

[061] Alternatively, to provide more structural stability, the third flexible framing rod 34 can cross the first flexible framing rod 20 and the second flexible framing rod 30 at a location offset from where the first flexible framing rod 20 and the second flexible framing rod 30 cross each other as shown in Fig. 6. To accomplish this, it is preferred to connect the third flexible framing rod 34 to the first flexible framing rod 20 and the second flexible framing rod 30 using connections ordinarily used to removably connect two intersecting rods, such as the plastic connector 39 shown in FIG 6A.

[062] The fast-erecting portable structure can optionally include a fourth flexible framing rod 114. Shown in FIGS. 17-17C is one embodiment having a fourth framing rod 114. In this embodiment, neither the third framing rod 34 nor the fourth framing rod 114 crosses the apex of the tent. Instead, the third and fourth framing rods (34 & 114) split away from each other at the base and intersect the first and second flexible framing rods (20 & 30) at points offset from the apex of the tent. This offset adds structural stability to the frame. Like the first and second flexible framing rods (20 & 30), the flexible skin 10 is non-removably connected to the two ends 22 of the third and fourth framing rods (34 & 114). Unlike the first and second flexible framing rods (20 & 30), the third and fourth framing rods (34 & 114) are removably connected to the middle of the flexible skin 10. Removably connecting the flexible skin 10 to the middle of the third and fourth framing rods (34 & 114) permits the first, second, third and fourth framing

rods to be rotated relative to each other for easier storage as discussed below. More flexible framing rods can be added in a similar manner.

[063] It is preferred to removably connect the flexible skin 10 to the middle of the third and fourth framing rods (34 & 114) by a plurality of framing rod hooks 36. The framing rod hooks 36 can be removably connected to the flexible skin 10 by the use of fabric loop 38. The fabric loop 38 can be sewn into the flexible skin 10. In operation, the fast-erecting tent shown in FIGS. 17 – 17C will spring roughly into shape when released in a substantially upright position, largely due to the first and second flexible framing rods (20 & 30) trying to straighten out and the flexible skin 10 holding them in an inverted u-shape. Once released in a substantially upright position, a user can then manually connect the framing rod hooks 36 to the third and fourth framing rods (34 & 114) to create the fast-erecting tent shown in FIGS. 17 - 17C. To dismantle the tent, a user would simply manually disconnect the framing rod hooks 36 from the third and fourth framing rods (34 & 114), rotate the four flexible framing rods (20, 30, 34, 114) until they become substantially aligned with each other, and store the fast-erecting tent in a storage bag as described more fully below.

[064] Another embodiment is shown in FIGS. 18 – 18D. The embodiment shown in FIGS. 18 – 18D is similar to the tent shown in FIG 1 and 1A, except that flexible framing rod 20 is replaced with a first pair of flexible framing rods 20A and 20B and flexible framing rod 30 is replaced with a second pair of flexible framing rods 30A and 30B. In this embodiment, none of the flexible framing rods (20A, 20B, 30A, 30B) cross the apex of the tent. Instead, each pair of flexible framing rods (20A & 20B) and

(30A & 30B) split away from each other at the base and intersect each other at points offset from the apex of the tent. This offset adds structural stability to the frame.

[065] Like the first and second flexible framing rods (20 & 30), the flexible skin 10 is non-removably connected to the ends of the flexible framing rods (20A, 20B, 30A, 30B). Like the first and second flexible framing rods (20 & 30), the first pair of flexible framing rods 20A & 20B are slidably connected to the flexible skin 10 by sleeves 50. Unlike the first and second flexible framing rods (20 & 30), second pair of flexible framing rods 30A & 30B are removably connected to the middle of the flexible skin 10. Removably connecting the flexible skin 10 to the middle of the second pair of flexible framing rods 30A and 30B permits the flexible framing rods (20A, 20B, 30A, 30B) to be rotated relative to each other for easier storage as discussed below. More flexible framing rods and different configurations can be added in a similar manner.

[066] The fast-erecting portable structure can be stored by coiling the flexible framing rods (e.g., 20, 30, 34, 114, 20A, 20B, 30A, 30B) into a storage bag 60. It is preferred that the storage bag 60 be disk shaped but most any shape will suffice because the flexible framing rods will conform to the shape most bags. It is also preferred that the storage bag 60 have an interior pocket 62. The interior pocket 62 is valuable for assistance in coiling the flexible framing rods (20 & 30) into the storage bag 60. In addition to (or in place of) the interior pocket 62, a cinch-able strap 112 can be connected to the bag and used to hold the ends of the flexible framing rods when coiling the flexible framing rods into the storage bag. The purpose of the interior pocket 62 and/or the

cinchable strap 112 is to anchor the ends 22 relative to the storage bag 60 while coiling the flexible framing rods into the storage bag 60.

[067] One embodiment of a cinch-able strap is shown in FIG. 15. A strap 112 can be sewn into the storage bag 60 on one end and wrapped around the flexible framing rods on the other. By using a strap 112 having VELCRO® on each side (hooks on one side and pile on the other), the strap 112 can be wrapped around the flexible framing rods to secure them from moving in relation to each other and assist in keeping them in the interior pocket 62. Of course other known releasable connections can be used, such as snaps, buttons, zippers, knots, etc.

10 [068] As shown in FIG. 4A, the preferred embodiment of storage bag 62 comprises a front sheet 64 having a front sheet perimeter 66, a front sheet inside face 68, a front sheet outside face 70, an opening flap 72, and an opening flap perimeter 74, wherein the distance 76 between the opening flap perimeter 74 and the front sheet perimeter 66 is at least one inch, a back sheet 78 having a back sheet perimeter 80, a back sheet inside face 82, a back sheet outside face 84, and a first pocket 86, wherein the first pocket 86 is connected to the back sheet inside face 82 near the back sheet perimeter 80 and the front sheet perimeter 66 is connected to the back sheet perimeter 80. Optionally, the storage bag 60 can further comprise a spacer 88 having a first edge 90 and a second edge 92, wherein the first edge 90 of the spacer 88 is connected to the front sheet perimeter 66 and the second edge 92 of the spacer 88 is connected to the back sheet perimeter 80.

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The storage bag can also comprise a second pocket 94 connected to the front sheet inside face 68 of the near the front sheet perimeter 66. Preferably, the orientation of the first pocket 86 and the second pocket 94 is as shown in FIG. 13, wherein the opening of the first pocket 86 is in the opposite direction of the second pocket 94. It is also preferred that the storage bag have a zipper 96 connected to the front sheet along the opening flap perimeter 74. The storage bag 60 can be in the shape of a circular disk. It is preferred, though, that the storage bag be in the shape of an elongated circular disk as shown in FIG. 13.

[069] As illustrated in FIGS. 5A-5R, it is preferred to coil and stow the fast-erecting portable structure by use of the following steps. The first step is to rotate the first framing rod 20 relative to the second framing rod 30 so that they are roughly parallel to and next to each other. See FIG 5A. The second step is to insert one end 22 of the first framing rod 20 and one end 22 of the second framing rod 30 into the interior pocket 62. See FIGS. 5B - 5E, and see FIG 5S for the alternate embodiment having a spacer 88 and a first pocket 86 and second pocket 94. The third step is to incrementally coil the first framing rod 20 and the second framing rod 30 into the storage bag 60 working from the ends 22 of the framing rods (20 & 30) and tucking the framing rod into the storage bag at approximately one foot of flexible framing rod (20 & 30) at a time until the entire length of framing rods (20 & 30) are coiled inside the storage bag 60. See FIGS. 5E - 5J. The fourth step is to stuff the flexible skin 10 into the storage bag 60. See FIGS. 5K and 5N. The fifth step is to close the storage bag 60. See FIGS. 5O and 5R. It is preferred that the storage bag 60 be opened and closed by the use of a zipper 96.

[070] An alternative additional step can also be employed. After inserting the framing rod ends 22 into the interior pocket 62, the ends 22 (inside the interior pocket 62) can be placed on the ground for stability. The ends 22 can be then rotated as shown in FIG 16 and the framing rods (20 & 30) can be incrementally coiled into the storage bag 60 as the storage bag 60 is rotated along the ground. This allows a single person to have on and on the framing rods (20 & 30) already coiled inside the storage bag 60 and the other hand free to incrementally coil more length of framing rod (20 & 30) and the ground keeping the bottom of the storage bag 60 stabilized.

[071] To set up the four-paneled embodiment of the fast-erecting portable shelter once it has been coiled and stowed in the storage bag 60, one would simply grab the loose ends 22 of the flexible framing rods (20 & 30) (i.e., the ends 22 not in the interior pocket 62) and begin pulling the ends 22 from the storage bag 60 until the fast-erecting portable structure is completely out of the storage bag 60. One of the two flexible framing rods (20 & 30) is then released (so that the user is holding only one of the two flexible framing rods (20 & 30)). Once the user is holding only one of the two flexible framing rods (20 & 30), the fast-erecting portable structure will open on its own. The fast-erecting portable structure can then be placed in a desired location. The four ends 22 of the flexible framing rods (20 & 30) rest on the surface of the desired location forming a base 70. The fast-erecting portable structure allows the structure to be immediately erected from the coiled position in the storage bag 60 into the structure shown in FIGS. 1A and 1B without any intermediate steps or the addition or removal of

any parts. The method for the six-paneled embodiment shown in FIG 1C and 1D and other embodiments disclosed herein follow substantially the same steps.

[072] As shown in FIG. 7, the fast-erecting tent can utilize an optional fly 98. It is preferred that the fly 98 be made from UV resistant waterproof polyester, but many materials can be used. It is also preferred that the fly 98 have a snug fit on top of the fast-erecting tent. This can be accomplished by sewing elastic fabric loops 100 into the flexibly skin and sewing fly hooks 102 into the edge of the fly 98 at corresponding locations as shown in FIG. 7. Doing so, can keep the fly 98 snugged tight against the flexible framing rods (20, 30, and/or 34) of the fast-erecting tent, which helps increase the stability of the fast-erecting tent.

[073] The optional use of guys 104 and stakes 106 can further increase the stability of the fast-erecting tent. If desired, stakes 106 can be added through a second grommet 108 located in each of the flaps 12. Additionally, guys 104 can be tied to fabric guy loops 110 sewn into the fly and to a stake 106 in the ground. The guys can be tightened to further stabilize the fast-erecting tent as is customarily done in the field.

[074] In another embodiment, the fly 98 can also utilize flexible framing rods. For example, as shown in FIGS. 19 and 19A, fly framing rods 116 are non-removably connected the flexible skin 10 at the ends 22 of the fly framing rods 116. The fly framing rods 116 are slidably connected the flexible skin 10 in the middle fly framing rods 116. This can be accomplished through the use of a sleeve 50. Removably connecting the fly framing rods 116 in the manner previously disclosed herein could also be employed.

Openings in the flexible skin of the fly can allow the fly framing rods 116 to be connected to the flexible framing rods of the tent.

[075] Although the invention has been described in detail with reference to one or more particular preferred embodiments, persons possessing ordinary skill in the art to
5 which this invention pertains will appreciate that various modifications and enhancements may be made without departing from the spirit and scope of the claims that follow.